IN THE CLAIMS:

1.   A performance enhancing and force absorbing dental appliance adapted to lie within the mouth of an athlete having an upper jaw with anterior teeth, posterior teeth with occlusal surfaces, a palate and fossae with cartilage forming sockets, a tongue, and a moveable jaw with anterior teeth, posterior teeth with occlusal surfaces and condyles movably fitted with connective tissues and muscles within the socket forming the temporomandibular joints through which the auricula-temporalis nerves and supra-temporal arteries pass, the appliance comprising:

      (a)   a pair of occlusal posterior pads made of triple composite material with a base having a top layer of impressionable material, an intermediate layer of hard material and a somewhat impressionable bottom layer; and

      (b)   a continuous vertical arch open anteriorly and posteriorly, extending from the occlusal posterior pads and adapted to expand and contract to be molded to the palate and adapted to lie along the palate out of the way of the tongue extending directly across to and connecting the posterior pads together within the mouth.

2.   The dental appliance of claim 1, further comprising a tunnel beneath the arch and defined by the arch and the occlusal posterior pads, the tunnel being completely open anteriorly and posteriorly thereby allowing unobstructed movement of the tongue anteriorly and posteriorly.

3.   The dental appliance of claim 1, further comprising a stiffener embedded within the arch.

4.   The dental appliance of claim 3, wherein the stiffener is expandable and contractible, thereby following the arch as it is molded to the palate.

5.   The dental appliance of claim 3, wherein the stiffener is serpentine, further comprising a series of loops winding back and forth across the arch.

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6.   The dental appliance of claim 3, wherein the stiffener is constructed of said hard material and is continuos with said intermediate layer.

7.   The dental appliance of claim 1, further comprising a plurality of protrusions adapted to engage the central fossae of the posterior teeth of the upper jaw, thereby positioning the occlusal pads in engagement with the posterior teeth, pre-molars and molars.

8.   The dental appliance of claim 7, wherein the protrusions are constructed of said somewhat impressionable material, extending from said bottom layer through said intermediate layer and said top layer.

9.   The dental appliance of claim 1, wherein said bottom layer is wedge-shaped, being thicker posteriorly and thinner anteriorly, thereby forcing the condyle of the jaw to move downwardly and forwardly away from the auricula-temporalis nerves and supra-temporal arteries.

10.   The dental appliance of claim 1, wherein said impressionable layer is softenable by heat.

11.   The dental appliance of claim 9, wherein said impressionable layer comprises about 50% by weight of a polycaprolactone polymer and about 50% by weight of ethylene vinyl acetate.

12.   The dental appliance of claim 1, wherein said impressionable layer is soft while in the dark and hardens when exposed to light.

13.   The dental appliance of claim 1, wherein said intermediate layer comprises a thermoplastic.

14.   The dental appliance of claim 1, wherein said intermediate layer comprises a thermoplastic rubber.

15. 19. The dental appliance of claim 1, wherein said bottom layer comprises a thermoplastic elastomer.

16. 15. The dental appliance of claim 14, wherein said bottom layer comprises about a 50% by weight of Kraton and about a 50% by weight of ethylene vinyl acetate.

17. 20. The dental appliance of claim 1, further comprising a removable handle adapted for dipping the appliance into warm water to soften the impressionable material and inserting the appliance into the mouth for fitting.

18. 16. The dental appliance of claim 16 15, further comprising a straw adapted for sucking cold water into the mouth to cool the impressionable material after fitting.

19. 17. The dental appliance of claim 18 16, wherein the straw is formed within the handle.

20. 18. The dental appliance of claim 18 16, wherein the straw is attached to the handle.

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